



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

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October 27, 2014

Ref: 8P-W

Terri Mavencamp, Ph.D
Montana Department of Environmental Quality
Water Standards Section
1520 East Sixth Avenue
P.O. Box 200901
Helena, Montana 59820

Dear Dr. Mavencamp:

This will respond to your request for assistance from U.S. Environmental Protection Agency (EPA) Region 8 in establishing standards or health advisories for three pesticides of interest to Montana. These pesticides include:

Clothianidin (205510-53-8, 205510-92-5, 210880-92-5)
Glufosinate (77182-82-2)
Saflufenacil (372137-35-4)

The priority order for establishing human health standards by the Region is the Maximum Contaminant Level (MCL) established under the provisions of the Safe Drinking Water Act, a national Lifetime Health Advisory (LHA) established by the EPA Office of Water, and finally a Region 8 Lifetime Health Advisory using publicly available toxicity information. None of these pesticides has a drinking water MCL or a national LHA.

A National LHA or a Region 8 Advisory is calculated taking into account the toxicity information used to establish a Chronic Reference Dose (RfD, or safe exposure level) or the Oral Cancer Slope Factor (if one has been established). The standard exposure scenario for drinking water assumes that a 70 kg person consumes 2 liters of water per day. For an advisory based on the chronic RfD, the Relative Source Contribution (RSC) is also used. The RSC is applied to ensure that the total exposure to the chemical from all environmental media (drinking water, food, and air) is below the RfD. In the absence of reliable information from food and air, the Drinking Water Program uses a value of 0.2 for the RSC.

The general equation for an advisory based on the RfD is:

$$\text{LHA or Region 8 Advisory} = \text{RfD (mg/kg-day)} \times 70 \text{ kg} \times 1 \text{ day/2 Liters} \times \text{RSC}$$

The calculated value is rounded to one significant digit.

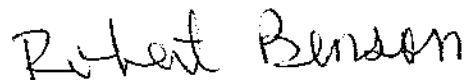
The general equation for an advisory based on the Oral Cancer Slope Factor is:

Region 8 Advisory = Target Cancer Risk x 70 kg x 1 day/2 L x 1/Oral Cancer Slope Factor

Montana uses a Target Cancer Risk level of 10^{-5} (1 in 100,000). The calculated value is rounded to one significant digit.

If you have any questions, please call me at (303) 312-7070.

Sincerely,

A handwritten signature in black ink that reads "Robert Benson". The script is cursive and fluid, with the first name and last name clearly distinguishable.

Robert Benson, Ph.D.
Toxicologist, Water Program

Enclosure

cc: Tonya Fish

Region 8 Recommended Health Advisories

Clothianidin

The EPA Pesticide Program RfD is 0.098 mg/kg-day. Based on the standard formula, the advisory is:
Advisory = 0.098 mg/kg-day x 70 kg x 1 day/2 Liters x 0.2 = 0.7 mg/L

The Pesticide Program has classified Clothianidin as “Not likely to be carcinogenic to humans.”

Reference: Clothianidin – Acute and Chronic Dietary Exposure and Risk Estimates for Requested Amended Registration on Peppers and New Uses on strawberry, Citrus, Pistachio, and Tea. 26 September 2012 (attached).

Glufosinate

The EPA Pesticide Program RfD is 0.006 mg/kg-day. Based on the standard formula, the advisory is:
Advisory = 0.006 mg/kg-day x 70 kg x 1 day/2 Liters x 0.2 = 0.04 mg/L

. The Pesticide Program has classified Glufosinate as “Not likely to be carcinogenic to humans.”

Reference: Glufosinate Ammonium. Updated Human Health Assessment for the Proposed New Use of Glufosinate Ammonium in/on Citrus Fruit (Crop Group 10), Pome Fruit (Crop Group 11), Stone Fruit (Crop Group 12), Olives and Sweet Corn. 25 July 2012 (attached).

Saflufenacil

The EPA Pesticide Program RfD is 0.046 mg/kg-day. Based on the standard formula, the advisory is:
Advisory = 0.046 mg/kg-day x 70 kg x 1 day/2 Liters x 0.2 = 0.3 mg/L

The Pesticide Program has classified Saflufenacil as “Not likely to be carcinogenic to humans.”

Reference: Saflufenacil. Human-Health Risk Assessment in Support of Tolerances for Residues in/on Barley, Wheat, Grass, and Olives. 4 June 2014 (attached).

